EXHIBIT 2

Declaration of Matt Kamen
in Support of Motion for Sanctions

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

HYPER SEARCH LLC, Plaintiff, v. FOURSQUARE LABS, INC., Defendant.	C.A. No. 1:18-cv-01274-CFC

DECLARATION OF MATTHEW KAMEN IN SUPPORT OF FOURSQUARE LAB INC.'S MOTION TO DISMISS AND FOR SANCTIONS

Matthew Kamen declares:

1. I am the Senior Vice-President of Engineering at Foursquare Lab Inc. I have personal knowledge of the facts set forth herein and, if called as a witness, could testify competently to them.

2. I graduated from Harvard University in 2003. In 2005, I went to work for Goldman Sachs and eventually became the Vice-President of Technology. In 2011, I joined Foursquare and started working on the web team as an individual contributor. In 2016, I became the Vice-President of Enterprise and in 2017 I became Senior Vice-President of Engineering. I am the most senior person in the engineering department.

3. Foursquare provides an online service that makes recommendations to users who are searching for places to go, such as an Italian restaurant in Wilmington, Delaware. This is done by use of either the Foursquare app or through a web page on Foursquare.com.

4. While working at Foursquare for the past seven years I have developed a deep understanding of our technology and how our various products work, including our recommendation service.

5. I understand that Hyper Search sued Foursquare for infringing two patents that involve the use of neural networks "for controlling venue information output based on user feedback about venues, such as restaurants and other entities." (Complaint ¶7). I find this troublesome as Foursquare unequivocally does not use a neural network for this purpose.

6. Our system works as follows: When a user executes a search for a nearby Italian restaurant, Foursquare's server first retrieves a list of Italian restaurants. This is a coarse process that generates a list that is too long to show a user. For example, the results would include Italian restaurants that would be too far away from the user.

7. The system then generates a series of scores based on many features such as the restaurant's distance from the user, the restaurant's popularity, the number of the user's friends who have been to the restaurant, and whether the user or the user's friends have previously liked or disliked the restaurant.

8. The system then develops a ranking for each of the restaurants by looking to various features such as the restaurant's distance from the user, the restaurant's popularity, the number of the user's friends who have been to the restaurant, and whether the user or the user's friends have previously liked or disliked the restaurant. Each feature has a preset value (or weight) assigned to it. For example, assume that twenty of the user's friends have been to the restaurant. This twenty-value (or score) is multiplied by a weight value, assume 0.05, to provide a weighted value of 1.0. As another example, the system may find a restaurant that is two blocks away and one that is fifteen miles away. This distance-value (or score) for each restaurant is combined with a weight assigned to that feature (i.e., distance from the user), assume again 0.05, to provide a value of -0.02 for the restaurant that is two blocks away and 0.0033 for the restaurant that is fifteen miles away, showing a preference for closer locations. The final score

value, which is a combination of the weighted scores, is then used in determining the order in which the Italian restaurants are presented to the user.

9. This rating determination method used in the system is in no way similar to a neural network.

10. At Foursquare, the weight given to each feature or a merged group of features is set manually by our engineers and does not change unless we decide to have one of our engineers manually make changes by reviewing search results to see if he or she thinks that the results are not as useful as they can be. For example, if the search for an Italian restaurant in Wilmington shows as the first result a restaurant that is five miles from where the search takes place, the engineer may give a greater weight to the distance to the restaurant so that restaurants that are closer to the user are recommended.

11. Having engineers manually adjust the weight given to certain features is diametrically opposed to the way weights are adjusted in a neural network. In a neural network, the system itself—as opposed to an engineer—uses the feedback provided by users and readjusts weights automatically. For example, a neural network would understand from the restaurants chosen by users from the list of recommendations given to them that the users may value the proximity to where they are more than whether their friends have been there. The neural network would then adjust the weight given to the features to give more weight to proximity.

12. I understand that Hyper Search refers in its complaint to a document titled "Finding the Perfect 10: How We Developed the Foursquare Rating System" as evidence that Foursquare uses a neural network. But that article makes clear that we use a natural language pipeline in combination with a statistical analysis model known as trinomial logistic regression to determine whether a particular user response is a "like," "dislike," or okay—the three

options—and only describes how we determine the meaning of user feedback on an item. For example, an "amazing" is turned into a "like" for the purposes of ranking the restaurant. For clarity, trinomial logistic regression is a statistical analysis modelling method and is not a neural network.

I declare under penalty of perjury that the foregoing is true and correct

Dated: November 2, 2018

New York, New York

Matthew Kamen